4.5 Energy

This section of the EIR includes an analysis of the energy usage of the CIP projects proposed in the Master Plans, in accordance with PRC Section 21100(b)(3), CEQA Guidelines Section 15126.4, and CEQA Appendix F: Energy Conservation. The analysis assesses whether the proposed CIP projects would employ an efficient use of energy (including electricity and diesel fuel consumption).

Energy usage from the CIP project facilities proposed in the Master Plans is also a consideration in assessing potential impacts to global climate change. For further discussion of this issue, please refer to Section 4.7 (Greenhouse Gas Emissions) of this EIR.

As discussed in Chapter 4, Environmental Analysis, the following CIP projects have been addressed in previous CEQA documents: Sewer CIP Projects SR-6, N-1, N-2, N-5, N-7, N-8, N-10, N-11, I-3, I-4, I-5, and I-6; Water CIP Projects 7, 8, 40, R6; and Recycled Water CIP Project ES3. However, these prior CEQA documents did not address energy impacts. Therefore, these projects are included in the analysis in this section.

4.5.1 Environmental Setting

4.5.1.1 Existing Conditions

Electrical usage data at City sewer and CMWD facilities was obtained from meter readings covering all electricity and natural gas purchased from San Diego Gas & Electric (SDG&E) and consumed by City sewer and CMWD facilities. Usage data is from the 2008 fiscal year because this is the most recent year for which the City was able to provide comprehensive data. Total annual electricity consumption during this 12-month period for existing city sewer facilities was 1.48 million kilowatt per hour (kWh), consumption at CWMD water facilities was 0.68 million kWh, and consumption at recycled water facilities was 1.58 million kWh. Energy consumption for all facilities was a total of 3.74 million kWh, approximately 312,000 kWh per month. Energy use for the CMWD water facilities includes operations of the CMWD maintenance and operations facility, which also generated an annual natural gas demand of 902 therms. No other sewer, water, or recycled water facilities use natural gas. Among the City's sewer and the CMWD's water facilities, the highest rate of electric consumption occurs in the operation of pump stations (average 86,000 kWh per year). The Carlsbad Water Recycled Water Facility consumes the majority of electricity among the CMWD recycled water facilities (1.2 million kWh per year), followed by pump stations (average 92,500 kWh per year). Water and recycled water pressure regulating stations also consume an average of 676 kWh per year.

4.5.2 Regulatory Framework

4.5.2.1 State

California Code of Regulation Title 24, Part 6

Title 24 of the California Code of Regulation (CCR), Energy Efficient Standards for Residential and Nonresidential Buildings, was adopted in 1978 by the California Energy Commission (CEC) in response to a legislative mandate to reduce California's energy consumption. Title 24 requires developers to

incorporate energy conserving features into new construction. New buildings in California are required to conform to energy conservation standards specified in Title 24 of the CCR. The standards apply only to residential and non-residential buildings for human occupancy. There are no standards for infrastructure facilities such as the proposed CIP projects in Title 24. However, Title 24 does include standards for outdoor lighting, whether attached to buildings, poles, structures or self supporting. Any outdoor lighting associated with the proposed CIP projects would be subject to Title 24.

California Code of Regulation Title 24, Part 11

Title 24, Part 11 of the CCR is the California Green Building Standards (CalGreen). In 2007, Governor Schwarzenegger directed the California Building Standards Commission to work with state agencies on the adoption of green building standards for residential, commercial and public building construction for the 2010 code adoption process. The 2010 version of CalGreen took effect January 2011 and instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The CalGreen standards do not include requirements for infrastructure facilities; however, the guidelines are intended to reduce the amount of water and sewer service needed to serve future development. Use of recycled water is also encouraged in the standards.

California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the fewest environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators.

4.5.3 Project Impacts and Mitigation

4.5.3.1 Issue 1 – Energy Consumption

Energy Issue 1 Summary	
Would implementation of the Sewer, Water, and Recycled Water Master Plans result in the inefficient, wasteful, and unnecessary use of energy?	
Impact: The construction and operation of CIP projects under the Sewer, Water, and Recycled Water Master Plans would not result in the inefficient, wasteful or unnecessary use of energy.	**Mitigation:** No mitigation required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Impacts are less than significant without mitigation.

Standards of Significance

Based on PRC Section 21100(b)(3), CEQA Guidelines Section 15126.4, and CEQA Appendix F: Energy Conservation, implementation of the Master Plans would have a significant impact associated with energy conservation if it would result in the wasteful, inefficient, and unnecessary consumption of energy.

Impact Analysis

CIP Project Construction

Construction of the proposed CIP projects in the Master Plans would result in the consumption of fuel associated with the operation of construction equipment. Due to a number of unknown factors including the specific site conditions, the horsepower of the engine, the load factor of each machine, and the number of days each piece of equipment would be used, it is not possible to determine the precise total fuel consumption that would occur during construction at each CIP project site at this time. However, there are no unusual project site characteristics within the sewer, water, and recycled water service areas that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in other parts of the region and the state. Construction fuel consumption associated with the proposed CIP projects would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region. Any unforeseen circumstances that would result in wasteful, inefficient or unnecessary consumption of energy are speculative and are not a reasonably foreseeable impact of the proposed Master Plans. Therefore, construction of the proposed CIP projects would not result in the wasteful, inefficient, and unnecessary consumption of energy. This impact would be less than significant.

CIP Project Operation

Transportation Energy Demand

The majority of the proposed CIP projects are underground pipelines, improvements to existing facilities, or the construction of new facilities on existing CMWD or City property in Carlsbad, Oceanside, San Marcos, and Vista. Following construction, the underground pipelines would be passive and would not require regular maintenance. Occasional vehicle trips may be required for repair or inspection, similar to existing pipelines. Existing CMWD and City facilities require vehicle trips for maintenance. New facilities or improvements at these locations would not result in new maintenance vehicle trips. The proposed groundwater pump (Water CIP Project 51) and treatment facility (Water CIP Project 52) would require regular maintenance trips; however, the Gateshead lift station, the Simsbury lift station, and Vancouver lift station (Sewer CIP Projects SR-6 and SR-11) would be removed and would no longer require maintenance trips. The Master Plans would not generate a substantial net increase in vehicle trips. Additionally, the vehicle trips needed for the CIP projects would have a purpose, such as scheduled or emergency maintenance. No wasteful, inefficient, or unnecessary trips would be generated. Therefore, this impact would be less than significant.

Electricity Demand

Pipeline projects, once constructed, would not require the use of electricity, emergency generators, or any other type of fuel-consuming operating equipment. Additionally, the proposed repairs and improvements to existing facilities would not result in an increase in energy demand at these facilities.

Some CIP projects would reduce the number and capacity of lift station pumps (Sewer CIP Projects SR-6, SR-10, and SR-11, and Water CIP Project PS2), which would result in a reduction in energy use compared to existing conditions. However, the proposed Master Plans would upgrade the capacity of several pump stations (Sewer CIP Projects I-4, R2, and SR-25; and Water CIP Projects PS1, PS3, and PS4), install new emergency generators (Water CIP Projects PS1 and F14), and construct new pump and lift stations (Sewer CIP Project I-1 and Water CIP Projects F14 and 51), a groundwater treatment plant (Water CIP 52), new lights at Maerkle Reservoir (R7), and increase the capacity of the CWRF (Recycled Water CIP projects 81 and 82) that would result in an increase in electricity demand. The existing energy demand at similar facilities was used to project the net increase in electricity demand with the implementation of the CIP projects. The new electric emergency generators are assumed to be tested monthly for 30 minutes. The upgraded sewer pump stations and new Buena Vista lift station would result in an annual increase in demand of approximately 390,000 kWh. The new water pump stations and upgraded capacities, and the new groundwater facilities would result in an annual increase in demand of approximately 1.46 million kWH. The increase in capacity at the CWRF would result in a net increase in demand of 2.11 million kWh. The total net increase in electricity demand would be 3.96 kWh at buildout of the sewer, water, and recycled water systems, which is approximately double existing electricity demand.

The City and CMWD conduct routine maintenance on all infrastructure facilities and would incorporate the proposed CIP projects into the maintenance schedule, including periodic pump efficiency testing to ensure that inefficient use of energy would not occur. Several CIP projects replace older pumps with newer models that would be expected to operate more efficiently. The Sewer Master Plan proposes wiring repairs to the Simsbury and Villas lift stations that would improve energy efficiency at these facilities. Additionally, the proposed CIP projects would not be considered wasteful or unnecessary because the identified projects are needed to provide adequate sewer, water, and recycled water to the City and CMWD service areas. Therefore, the increase in energy use associated with the Master Plans would not be considered wasteful, inefficient, or unnecessary.

Mitigation Measures

Impacts related to the consumption of energy would be less than significant. No mitigation is required.

Significance After Mitigation

Impacts related to the consumption of energy are less than significant without mitigation.

4.5.4 Cumulative Impacts

Energy Cumulative Issue Summary

Would implementation of the Sewer, Water, and Recycled Water Master Plans have a cumulatively considerable contribution to the inefficient, wasteful, and unnecessary use of energy considering past, present, and probable future projects?

Cumulative Impact	Significant?	Project Contribution
Energy Consumption	No	No cumulative impact.

The City sewer and CMWD water and recycled water service areas are the geographic scope of cumulative for energy. Cumulative growth in the service areas would result in the development of new buildings that would result in increased energy consumption. As required by the California Public Utilities Commission (CPUC), California utilities including SDG&E, are required to file long-term energy resources plans with the CPUC. SDG&E's 2006 Long Term Procurement Plan includes plans and strategies to meet the future energy demands of its customers (SDG&E 2009). However, if the cumulative projects did not implement energy efficient features to prevent the wasteful and inefficient use of energy, demand could exceed the SANDAG projections and a cumulative impact would occur. The present and probable projects would comply with Title 24 regulations that would ensure that energy use would not be wasteful or inefficient. All new structures would also comply with the 2010 California Green Building Standards Code, which went into effect January 1, 2011, and would further ensure that energy use is efficient. The proposed CIP projects are exempt from Title 24, with the exception of outdoor lighting. However, as discussed under Section 4.5.3.1 (Issue 1), the Master Plans include CIP projects that would inspect facilities to ensure proper operation, would replace aging equipment with newer models, would repair existing facilities to be more efficient, and would implement the projects necessary to serve cumulative growth in demand in the service areas. Therefore, the Master Plans, in combination with other cumulative projects, would not result in a cumulatively significant increase in energy usage.

4.5.5 References

California Building Standards Commission. 2011. California Code of Regulations, Title 24, Part 11, California Green Building Standards Code. January 1.

City of Carlsbad. 2011. SDGE Energy FY 07/08 With Facility ID, Cost, and Usage. Provided by Elzbieta Karczewski on December 6, 2011.

San Diego Gas and Electric Company. 2009. San Diego Gas and Electric Company's 2006 Long Term Procurement Plan. February 20.

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